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Quality Engineering Test Report

SERIES:PSP-500 500W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. PSP-500-5 5V/80A D. PSP-500-15 15V/33A G. PSP-500-48 48V/10.5A
B. PSP-500-12 12V/41.5A E. PSP-500-24 24V/20.8A
C. PSP-500-13.5 13.5/37A F. PSP-500-27 27V/18.5A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	MAX. INRUSH CURREN	I/P:230VAC SPEC:40A O/P: FULL LOAD	A: 33.3A B: 31.8A C: 33.7A D: 31.5A E: 35.1A F: 31.9A G: 35.1A	P
2	SET UP TIME	I/P:230VAC SPEC:1.5S O/P:FULL LOAD	A: 381.1mS B: 413.8mS C: 396.6mS D: 417.2mS E: 400.8mS F: 387.8mS G: 397.0mS	P
3	RISE TIME	I/P:230VAC SPEC:50mS O/P:FULL LOAD	A: 1.09 mS B: 19.1 mS C: 20.2 mS D: 14.3 mS E: 20.9 mS F: 9.33 mS G: 26.1 mS	P
4	HOLD UP TIME	I/P:230VAC SPEC:15mS O/P:FULL LOAD	A: 24.77mS B: 24.21mS C: 31.0mS D: 32.59mS E: 35.06mS F: 30.47mS G: 33.37mS	P
5	LINE REGULATION	I/P:180~264VAC O/P:FULL LOAD SPEC: A: ± 0.5 % B: ± 0.3 % C: ± 0.3 % D: ± 0.3 % E: ± 0.2 % F: ± 0.2 % G: ± 0.2 %	A. +0.00 % ~ +0.00 % B. +0.00 % ~ +0.05 % C. +0.00 % ~ +0.00 % D. -0.04 % ~ +0.04 % E. +0.00 % ~ +0.00 % F. +0.00 % ~ +0.22 % G. +0.01 % ~ +0.01 %	P
6	LOAD REGULATION	I/P:230VAC SPEC: A: ± 2 % O/P:MIN. TO FULL LOAD B: ± 0.5 % C: ± 0.5 % D: ± 0.5 % E: ± 0.5 % F: ± 0.5 % G: ± 0.5 %	A. -0.49 % ~ -0.12 % B. -0.26 % ~ -0.05 % C. -0.18 % ~ +0.00 % D. -0.25 % ~ +0.08 % E. -0.1 % ~ +0.025 % F. -0.066 % ~ +0.044 % G. -0.089 % ~ +0.052 %	P
7	OUTPUT VOLTAGE TOLERANCE	I/P:180~264VAC SPEC: A:± 2% O/P:0% TO FULL LOAD B:± 1% C:± 1% D:± 1% E:± 1% F:± 1% G:± 1%	A. -0.38 % ~ 0.5 % B. -0.26 % ~ -0.06 % C. +0.04 % ~ +0.33 % D. -0.29 % ~ +0..04 % E. +0.00 % ~ +0.13 % F. 0.14 % ~ 0.048 % G. +0.077 % ~ +0.26 %	P
8	OVER LOAD PROTECTION	I/P:230VAC SPEC: A:115%~125% O/P:TESTING B:115%~125% C:115%~125% D:115%~125% E:115%~125% F:115%~125% G:115%~125%	A: 125% B: 121% C: 123% D: 118% E: 125% F: 130% G: 125%	P
9	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:90~264VAC O/P:FULL LOAD	A. 56.7V ~ 264 VAC B. 61.64V ~ 264 VAC C. 56.63V ~ 264 VAC D. 59.59V ~ 264 VAC E. 56.6V ~ 264 VAC F. 58.59V ~ 264 VAC G. 57.6V ~ 264 VAC	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
10	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: 100mV B: 150mV C: 150mV D: 150mV E: 150mV F: 150mV G: 200mV	A: 37 mV B: 97 mV C: 52 mV D: 44 mV E: 61 mV F: 77 mV G: 124 mV	P
11	AC INPUT CURRENT	I/P:230VAC SPEC:3.5A O/P:FULL LOAD	A: 2.3 A B: 2.6 A C: 2.61 A D: 2.61 A E: 2.58 A F: 2.56 A G: 2.58 A	P
12	EFFICIENCY	I/P:230VAC SPEC: A:76% O/P:FULL LOAD B:82% C:82% D:82% E:84% F:84% G:86%	A: 76.33 % B: 85.16 % C: 84.98 % D: 84.17 % E: 85.99 % F: 86.5 % G: 86.85 %	P
13	POWER GOOD SINGLE	I/P:230VAC SPEC:10mS O/P:FULL LOAD	A: 62.4 mS B: 50.6 mS C: 46.4 mS D: 54.6 mS E: 45.1 mS F: 58.7 mS G: 53.4 mS	P
14	POWER FAIL SINGLE	I/P:230VAC SPEC:1mS O/P:FULL LOAD	A: 1.7 mS B: 9.1 mS C: 41.5 mS D: 20.2 mS E: 18.9 mS F: 17.3 mS G: 19.3 mS	P
15	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 4.75 V ~ 5.5 V O/P:MIN. LOAD B: 10 V ~ 13.2 V C: 12 V ~ 15 V D: 13.5 V ~ 13.5 V E: 20 V ~ 26.4 V F: 24 V ~ 30 V G: 41 V ~ 56 V	A. 4.22 V ~ 6.29 V B. 9.04 V ~ 13.84 V C. 10.4 V ~ 16.1 V D. 12.7 V ~ 19.26 V E. 18.93 V ~ 27.79 V F. 21.79 V ~ 32.09 V G. 39.29 V ~ 58.18 V	P
16	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<1mA N-FG--<1mA	A: L-FG: 0.48mA N-FG: 0.48mA B: L-FG: 0.62mA N-FG: 0.6mA C: L-FG: 0.52mA N-FG: 0.5mA D: L-FG: 0.55mA N-FG: 0.5mA E: L-FG: 0.08mA N-FG: 0.08mA F: L-FG: 0.5mA N-FG: 0.5mA G: L-FG: 0.55mA N-FG: 0.54mA	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
17	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3KVAC/ 1 min. (10mA CUT-OFF) I/P - FG: 1.5KVDC/ 1 min. (10mA CUT-OFF) O/P -FG: 0.5KVDC/ 1 min. (10mA CUT-OFF)	A: I/P-O/P: 1.107mA, I/P-FG: 3.56mA, O/P-FG: 14.9mA B: I/P-O/P: 1.09mA, I/P-FG: 3.08mA, O/P-FG: 14.95mA C: I/P-O/P: 0.733mA, I/P-FG: 2.213mA, O/P-FG: 15.16mA D: I/P-O/P: 0.79mA, I/P-FG: 3.05mA, O/P-FG: 15.29mA E: I/P-O/P: 0.962mA, I/P-FG: 0.438mA, O/P-FG: 15.29mA F: I/P-O/P: 0.975mA, I/P-FG: 0.125mA, O/P-FG: 0.098mA G: I/P-O/P: 1.311mA, I/P-FG: 3.700mA, O/P-FG: 15.13mA	P
18	INSULATION RESISTANCE	SPEC: I/P-O/P: 500VDC/100MOhms MIN. I/P-FG: 500VDC/100MOhms MIN. O/P-FG: 500VDC/100MOhms MIN.	A: TEST OK B: TEST OK C: TEST OK D: TEST OK E: TEST OK F: TEST OK G: TEST OK	P
19	REMOTE CONTROL	I/P:230V O/P:FULL LOAD SPEC: 0V~0.8V POWER ON, 4V~10V POWER OFF	A: POWER ON: OK, POWER OFF: OK B: OK / OK C: OK / OK D: OK / OK E: OK / OK F: OK / OK G: OK / OK	P
20	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:30.8°C BURN-IN DURATION : 15 hrs	F:NON BREAK	P
21	ENVIRONMENT TEST (SAMPLE F:)	1.LOW TEMPERATURE TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-10 °C	AFTER 2.5 hrs POWER ON OK	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE: 51 °C	AFTER 3 hrs NON BREAK	
		3.High Humidity High Voltage On/Off Test I/P:267VAC O/P:FULL LOAD AMBIENT TEMPERATURE: 25.7 °C AMBIENT HUMIDITY:95%	AFTER 14 hrs POWER ON NON BREAK	

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<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>22</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td>F: I/P :230VAC AFTER 15 hr BURN-IN
O/P :FULL LOAD TA:30.8°C
<table>
<tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr>
<tr><td>BD1</td><td>BRIDGE DIODE</td><td>60.3°C</td><td>29.5°C</td></tr>
<tr><td>Q1</td><td>MAIN TRANSISTOR</td><td>65.9°C</td><td>35.1°C</td></tr>
<tr><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>67.7°C</td><td>36.9°C</td></tr>
<tr><td>D63</td><td>O/P DIODE</td><td>51.6°C</td><td>20.8°C</td></tr>
<tr><td>C64</td><td>O/P FILTER CAPACITOR</td><td>45.0°C</td><td>14.2°C</td></tr>
<tr><td>L1</td><td>O/P CHOCK</td><td>56.6°C</td><td>25.8°C</td></tr>
<tr><td>C5</td><td>I/P FILTER CAPACITOR</td><td>51.9°C</td><td>21.1°C</td></tr>
<tr><td>LF1</td><td>I/P FILTER TRANSFORMER</td><td>48.3°C</td><td>17.5°C</td></tr>
</table></td><td>P</td></tr>
<tr><td>23</td><td>CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="2">F: FUSE :10A/250V
BRIDGE DIODE :GBJ2506 25A/600V
LINE FILTER :LF 36T40060V
TRANSFOMER TF-647-R3 ETD-44
POWER SWITCHER :IRFP460 20A/500V
OUTPUT DIODE :ESAD92-02 20A/200V
OUTPUT CAPACITOR :RUBYCON 1000uF/35V 105°C YXG
INPUT CAPACITOR :HITACH 470uF/400V 85°C
P.C.B :PSP-500-R1 FR-4 20Z DS</td></tr>
<tr><td>24</td><td>LIFE CYCLE</td><td colspan="2">F: SUPPOSE C64 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:25°C Tc64:45.0℃ Life: 582152hrs
I/P:230VAC O/P:FULL LOAD Ta:50°C Tc64:61.8℃ Life: 131192hrs</td><td>P</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th>TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>20010402</td><td>RD SAMPLE
12V,13.5V,15V
24V,27V,48V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20010520</td><td>PRODUCTION SAMPLE
A104B23
5V,12V,13.5V
15V,24V,27V,48V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20010912</td><td>PRODUCTION SAMPLE
A107B24
12V,15V,27V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20010925</td><td>PRODUCTION SAMPLE
A108C27A
5V,13V,24V,48V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20010930</td><td>PRODUCTION SAMPLE
A1109C22
13.5V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20011015</td><td>PRODUCTION SAMPLE
A110A20
27V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20011115</td><td>PRODUCTION SAMPLE
A110C20
48V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
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